# Space Science Seminar

## MONDAY, 2015 May 18
## 2:00 p.m.
## NSSTC/2096

# Deciphering the Solar Magnetic Activity Cycle(s)

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Host: Dr. Jonathan Cirtain

Recent observational findings suggest that the 11(-ish) solar sunspot cycle is a pattern resulting from the interaction, or interference, of large scale magnetic field bands that evolve within the Sun's convective interior over its 22-year magnetic polarity reversal cycle. These toroidal magnetic bands are anchored deep in the solar convection zone and migrate from high latitudes to the equator over 22 years, and new analysis techniques have allowed us to trace their migration from birth to death. We will see that the spatio-temporal interaction of these magnetic bands helps us frame the landmarks of the sunspot cycle with a surprising realization that, once considered, simultaneously permits insight into grand minima and the most extreme solar eruptions - the high and low points of the Sun-Earth Connection. Further, it is possible that, with refinement and an ongoing commitment to synoptic observational programs, these results offer greatly improved forecast skill on monthly, annual, decadal and centennial timescales while a comprehensive physical model can be developed.

http://solarscience.msfc.nasa.gov/colloquia/